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10/826,173	04/16/2004	Kanji Kirmoto	SIC-04-021	9874

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EXAMINER	
WILLIAMS, THOMAS J	

ART UNIT	PAPER NUMBER
3683	

MAIL DATE	DELIVERY MODE
09/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/826,173	KIRMOTO ET AL.	
	Examiner	Art Unit	
	Thomas J. Williams	3683	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *09 July 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-61,63-65 and 67-74* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *1-36,61,63-65,67 and 68* is/are allowed.

6)☒ Claim(s) *37-60 and 69-74* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. Acknowledgement is made in the receipt of the amendment filed July 9, 2007.

Reissue Applications

2. Claims 37-60 and 69-74 are rejected under 35 U.S.C. 251 as being improperly broadened in a reissue application made and sworn to by the assignee and not the patentee. A claim is broader in scope than the original claims if it contains within its scope any conceivable product or process which would have infringed the original patent. A claim is broadened if it is broader in any one respect even though it may be narrower in other respects.

Claims 37 and 72-74 omit limitations pertaining to the interior of the actuating mechanism, specifically "an input cam movably mounted within the caliper housing to move in a rotational direction about a longitudinal axis, but not in an axial direction, said input cam having a first camming surface with an axially extending guide member non-movably fixed thereto at said longitudinal axis, and an output cam movably mounted within said caliper housing to move in the axial direction in response to rotation of said input cam, but not in the rotational direction, said output cam having a second camming surface with an axially extending bore, said guide member being at least partially disposed within said bore to ensure smooth relative movement between said input and output cams", added during prosecution of 09/531,570 (US 6,557,671) in the amendment dated November 8, 2002 to overcome the outstanding rejection in view of Kawaguchi (US 3,789,959) mailed July 11, 2002.

The above limitations have been replaced with new limitations directed to an exterior portion of the actuating arm, specifically "wherein the actuated mechanism

comprises an elongated actuating arm rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position towards the braking position; and wherein the actuating arm has a curved surface with a first portion coincident with a cable clamp and a second portion that extends from the first portion towards the cable support so that the cable, when coupled to the cable clamp, approaches the guide surface from the opening in the cable support essentially tangent to the guide surface and is supported by the guide surface when the first friction member is in the release position".

The omitted limitations relate to previously surrendered subject matter and are directed to the input cam and the output cam and the specifics thereof, whereas the replacement limitations are directed to the actuating arm. The replacement limitations are not related to the omitted limitations, therefore a recapture rejection exists.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

5. Claims 37-43, 47-53 and 69-74 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,647,475 to Le Deit et al. in view of US 4,582,177 to Carre et al. and in view of US 6,148,964 to Huang.

Re-claims 37-40, 54 and 74, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12/46/48, a cable support 44 has an opening in element 42 for guiding a cable 38 therethrough; the cable support extends from a surface of the caliper housing (see figure 1) and is not adjustable (in any direction, as recited in claim 37) relative to the surface of the caliper housing (see figure 6 and column 5 lines 9-47, wherein Le Deit et al. teach the bracket as taking a single position relative to the housing that is not adjustable in any direction, since this single position is the optimum position); a first friction member 20a moves between a release position and a braking position; a second friction member 20b is coupled to the housing; an actuating mechanism 10 is moveable coupled to the caliper housing and moves the first friction member in an axial direction from the release position to the braking position; the actuating mechanism comprises an elongated actuation arm 32 rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having a curved guide surface with a first portion coincident with a cable clamp and a second portion extending from the first portion toward the cable support 44, wherein the second portion is defined by a protuberance (*claim 38*) that supports the cable.

Carre et al. teach a cable disc actuating system comprising an actuating arm 50 provided with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion extending from the first portion, wherein the second portion is a projection defined by a protuberance (see figure 6, note the slight protuberance at the cable exit portion of the arm) that supports the cable (*claim 38*); the projection has a radially outer portion and a radially outer portion (*claim 39*); the projection is disposed at the radially outermost portion of the actuating arm (*claim 40*); the cable, once coupled to the cable clamp, approaches the guide surface from the opening in the cable support in substantially a straight line (*claim 54*, due the curved guide surface the cable extending from the cable support will extend in a straight line as shown by Carre et al.). Furthermore, Carre et al. teach that the curved guide surface structure of the actuation arm provides for an increase in torque exerted during rotation, see column 4 lines 61-64, thereby improving braking response. It would have been obvious to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm taught by Carre et al., thereby improving the overall brake performance and response of the cable actuated brake mechanism.

In addition Le Deit et al. fail to specify the use of a mounting bracket, or the specifics of how the brake assembly is supported relative to the vehicle. Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanically actuated cable disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with the type of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claims 41 and 42, see the spring supported around the cable in figure 2.

Re-claim 47, the opening in the cable support 44 is provided with cable adjusting bolts or elements.

Re-claims 48 and 49, see column 2 lines 37-40.

Re-claims 50-53, Le Deit et al. as modified by Carre et al. fail to teach the specifics of the disc brake when mounted to a front fork of a bicycle. Huang teaches a typical manner by which to mount a mechanical disc brake to a front fork of a bicycle. The caliper housing includes a first mounting flange with a first opening 317, a second mounting flange with a second opening 317, the first opening is above a rotational axis, the second opening is below the rotational axis, the cable support is disposed about the rotational axis, the guide surface (as taught in Carre et al.) would be rearwardly of the rotational axis, and the cable support is rearwardly of the rotational axis. It would have been obvious to one of ordinary skill to have utilized the teachings of Huang when having mounted the brake apparatus of Le Deit et al. as modified by Carre et al., on a front fork of a bicycle, as the mounting structure of Huang is known in the art as a common means by which one could mount a brake assembly to a bicycle to yield predictable results, which is an easy method by which one could mount a brake assembly to a bicycle.

Re-claim 69, the cable support 44 is immobilized (see column 3 lines 39-43) with respect to the caliper housing 12 and as such is broadly interpreted as being one with the caliper housing.

Re-claim 70, the cable support comprises an elongated member.

Re-claim 71, once the support member is immobilized with respect to the housing the elongated member, that forms the opening, is immovable relative to the surface of the caliper housing.

Re-claim 72, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12/46/48, a cable support 44 has an opening in element 42 for guiding a cable 38 therethrough; the cable support extends from a surface of the caliper housing (see figure 1) and is not adjustable at any time relative to the surface of the caliper housing (see figure 6 and column 5 lines 9-47, wherein Le Deit et al. teach the bracket as taking a single position relative to the housing that is not adjustable at any time after assembly, the prior art is considered by the examiner as assembled and not at various points in time before final assembly); a first friction member 20a moves between a release position and a braking position; a second friction member 20b is coupled to the housing; an actuating mechanism 10 is moveable coupled to the caliper housing and moves the first friction member in an axial direction from the release position to the braking position; the actuating mechanism comprises an elongated actuation arm 32 rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having a curved guide surface with a first portion coincident with a cable clamp and a second portion extending from the first portion toward the cable support 44, wherein the second portion is defined by a protuberance (*claim 38*) that supports the cable.

Carre et al. teach a cable disc actuating system comprising an actuating arm 50 provided with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion extending from the first portion, wherein the second portion is a projection defined by a protuberance (see figure 6, note the slight protuberance at the cable exit portion of the arm) that supports the cable (*claim 38*); the projection has a radially outer portion and a radially outer

portion (*claim 39*); the projection is disposed at the radially outermost portion of the actuating arm (*claim 40*); the cable, once coupled to the cable clamp, approaches the guide surface from the opening in the cable support in substantially a straight line (*claim 54*, due the curved guide surface the cable extending from the cable support will extend in a straight line as shown by Carre et al.). Furthermore, Carre et al. teach that the curved guide surface structure of the actuation arm provides for an increase in torque exerted during rotation, see column 4 lines 61-64, thereby improving braking response. It would have been obvious to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm taught by Carre et al., thereby improving the overall brake performance and response of the cable actuated brake mechanism.

In addition Le Deit et al. fail to specify the use of a mounting bracket, or the specifics of how the brake assembly is supported relative to the vehicle. Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanically actuated cable disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with the type of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

Re-claim 73, Le Deit et al. teach a cable disc brake capable for use on a bicycle, comprising: a caliper housing 12/46/48, a cable support 44 has an opening in element 42 for guiding a cable 38 therethrough; the cable support extends from a surface of the caliper housing (see figure 1) and is not removable relative to the surface of the caliper housing (see figure 6 and column 5 lines 9-47, wherein Le Deit et al. teach the bracket as taking a single position relative

to the housing and is interpreted as being not removable, since this step need never be performed once assembled); a first friction member 20a moves between a release position and a braking position; a second friction member 20b is coupled to the housing; an actuating mechanism 10 is moveable coupled to the caliper housing and moves the first friction member in an axial direction from the release position to the braking position; the actuating mechanism comprises an elongated actuation arm 32 rotatably coupled to the caliper housing to cause the actuated mechanism to move the first friction member from the release position to the braking position. However, Le Deit et al. fail to teach the actuating arm having a curved guide surface with a first portion coincident with a cable clamp and a second portion extending from the first portion toward the cable support 44, wherein the second portion is defined by a protuberance (*claim 38*) that supports the cable.

Carre et al. teach a cable disc actuating system comprising an actuating arm 50 provided with a curved guide surface with a first portion coincident with a cable clamp 58 and a second portion extending from the first portion, wherein the second portion is a projection defined by a protuberance (see figure 6, note the slight protuberance at the cable exit portion of the arm) that supports the cable (*claim 38*); the projection has a radially outer portion and a radially outer portion (*claim 39*); the projection is disposed at the radially outermost portion of the actuating arm (*claim 40*); the cable, once coupled to the cable clamp, approaches the guide surface from the opening in the cable support in substantially a straight line (*claim 54*, due the curved guide surface the cable extending from the cable support will extend in a straight line as shown by Carre et al.). Furthermore, Carre et al. teach that the curved guide surface structure of the actuation arm provides for an increase in torque exerted during rotation, see column 4 lines 61-

64, thereby improving braking response. It would have been obvious to one of ordinary skill in the art to have replaced the actuating arm of Le Deit et al. with the actuating arm taught by Carre et al., thereby improving the overall brake performance and response of the cable actuated brake mechanism.

In addition Le Deit et al. fail to specify the use of a mounting bracket, or the specifics of how the brake assembly is supported relative to the vehicle. Huang teaches a common mounting bracket 4 structured as part of a bicycle for receiving and holding in place a mechanically actuated cable disc brake assembly. It would have been obvious to one of ordinary skill in the art when having utilized the disc brake assembly of Le Deit et al. on a bicycle to have provided the bicycle with the type of mounting bracket as taught by Huang, thus providing an easy means by which to mount the brake assembly to the bicycle.

6. Claims 55-59 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. in view of Carre et al. and Huang as applied to claim 37 above, and further in view of US 5,960,914 to Isai.

Re-claims 55, 56, 58 and 59, Le Deit et al. as modified by Carre et al. and Huang fail to teach a torsion spring. Isai teaches a torsion spring 131 used for biasing the actuating arm back to a non-actuated position or rest position. The torsion spring is positioned between the caliper and the actuating arm, with a first end adjustably connected to the caliper and a second end directly connected to the actuating arm. It would have been obvious to one of ordinary skill in the art to have provided the brake apparatus of Le Deit et al. with a return biasing member such as a torsion spring as taught by Isai, thus providing an inexpensive means by which to effectively release the brake. The torsion spring of Isai would have eliminated the need for spring

surrounding the cable in Le Deit et al., as each is considered functionally equivalent and would yield predictable results, which is a release function of the brake.

Re-claim 57, the torsion spring as taught by Isai is interpreted as being adjustably coupled to the caliper housing and the arm, since during assembly the torsion spring would experience some adjustment.

7. Claim 60 is rejected under 35 U.S.C. 103(a) as being unpatentable over Le Deit et al. as modified by Carre et al., Huang and Isai as applied to claim 58 above, and further in view of US 5,201,402 to Mott.

Le Deit et al. as modified fails to teach a plurality of holes for receiving the torsion spring, wherein the holes allow for adjustment of the torsion spring. Mott teaches the use of a plurality of holes for receiving an end of a torsion spring. The various positions of the holes offer different biasing forces. It would have been obvious to one of ordinary skill in the art to have provided the caliper housing, and even the actuating arm of Le Deit et al. with a plurality of holes for receiving an end of the torsion spring as taught by Mott, this would have provided an easy means by which to vary the biasing force of the spring.

Allowable Subject Matter

8. Claims 1-36, 61, 63-65, 67 and 68 are allowed.

Response to Arguments

9. Applicant's arguments filed July 9, 2007 have been fully considered but they are not persuasive. It is noted that the art rejection of claims 43-46 have been reconsidered in light of the remarks regarding the cable support not being adjustable in any direction relative to the caliper housing. Previously the examiner relied upon the adjustable nature of the cable support

relative the housing when adjusting the biasing force of the spring. However, upon further consideration this rejection cannot be maintained in light of the recitation highlighted by the applicant with regards to the cable support. This reconsideration does not affect the recapture rejection set forth above. The remarks set forth in the Office action mailed May 11, 2007 regarding the recapture rejection are maintained.

Conclusion

10. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

11. Any inquiries concerning this communication or earlier communications from the examiner should be directed to Thomas Williams whose telephone number is 571-272-7128. The examiner can normally be reached on Wednesday-Friday from 6:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi, can be reached at 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-6584.

TJW

September 25, 2007

THOMAS J. WILLIAMS
PRIMARY EXAMINER

Thomas Williams
AU 3683
9-26-07